

WSR-88D Program Software Changes
That May Impact
Radar Product Central Collection Dissemination Service (RPCCDS) Users

Updated 30 March 2005

PURPOSE:

This summary is intended to assist RPCCDS users plan for WSR-88D changes which may impact data format, data frequency, or data quality. While many changes are made to the WSR-88D Radar Product Generator (RPG) software during software releases to field sites, only a small subset may affect RPCCDS users.

CURRENT:

Build 6.1: This software was released to the field starting on 7 March 2005. The software corrects a problem with the WSR-88D SUPEROB product the National Center for Environmental Prediction uses to initialize numerical models. Users of the RPCCDS should not see a change in the products they receive due to this software.

Build 7: The target software installation sites and dates (subject to change) for the Build 7 Beta Test are listed below. The software is scheduled to begin to be released to field sites on 31 May 2005. The software will be released over a 5-week period and sites will have 60 days after receipt of the software kit to install the software on their RPG.

Atlanta, GA.... March 29, 2005
Wilmington, NC.... March 31 or April 1, 2005
Jacksonville, FL.... April 4 or 5, 2005
Flagstaff, AZ.... April 5 or 6, 2005
Las Vegas, NV.... April 26 or 27, 2005
South Kauai, HI.... April 27 28, 2005
Edwards AFB, CA.... May 2 or 3, 2005

The primary changes in RPG Build 7 are to implement the interface to the Open Radar Data Acquisition unit (RDA) to support testing and deployment of the Open RDA. The first of five beta tests/installations of the Open RDA is scheduled mid September 2005. The Open RDA deployment, scheduled to begin in early 2006, will last approximately 12 months. No new RPCCDS products will appear in Build 7 or Build 8 due to the Open RDA.

PLANNED CHANGES:

Build 8: Deployment of RPG Build 8 software is scheduled to begin in April 2006.

The Storm Cell Identification and Tracking (SCIT) algorithm used to generate Product 58, Storm Tracking Information (STI), will be enhanced in Build 8. The format of the product will not change, however, the content of the text portion (TAB) of the STI and Product 62, Storm Structure (SS), products will contain three SCIT filter configuration data values for information purposes. Users will be provided information on these text changes and sample data in advance of the release of Build8 to field sites. A

brief summary of the algorithm changes follows:

The input reflectivity data will be median filtered (smoothed) using a kernel which adjusts for different ranges. These filtered data are used to identify storm cells and diagnose most storm cell attributes. Unfiltered data will be used to determine the 2-dimensional feature maximum reflectivity. Tests National Severe Storm Laboratory scientists have performed indicate the filtering results in fewer storms being identified and large storms near the radar are less likely to be fragmented. This results in improved storm cell identification and in a lower tracking error rate.

Some fields in the alphanumeric component of certain Level III precipitation products will be removed. These fields were associated with logic in the precipitation processing software referred to as the “Time Continuity Test”. Affected products include: OHP, STP, DPA, DSP, DHR, and SPD. All version numbers for these products remain untouched. Details of the changes will be included in the Build 8 Interface Control Document (ICD) for RPG-to-Class 1 Users. The ICD will be available later this year and the ROC will send a notice to users when it becomes available. The format of the graphic product is not changing.

Change in Default Precipitation VCP: Volume Coverage Pattern (VCP) 21 has always served as the default precipitation mode VCP. Beginning with the release of Build 8, sites will be allowed to change the default precipitation VCP based on agreement by the local Unit Radar Committee. Some sites may not elect to change the default VCP while others may only change seasonally or on a case-by-case basis – all with the goal of maximizing the performance of the WSR-88D to support forecast and warning operations. In the spring, we will provide an estimate of how the amount of data flowing through the RPCCDS will change. A software change in Build may reduce the bandwidth increase due to this change in default precipitation VCP. The software will automatically return the radar to clear air mode when a precipitation event has ended. Currently the switch to clear air mode required manual intervention.

ADDITIONAL INFORMATION:

Changes made to the WSR-88D software are in response to NEXRAD Program approved requirements. The list of changes is approved about 11 months before the software is released to the field.

When Open RDAs are installed, there will be changes to the format of the “metadata” file at the start of each VCP. The size of the file will not change, but messages within the file will change. For example, information on additional RDA alarms will be added and the content of some of the system performance data will change, thus changing the format of the contents of the metadata file. These changes should not impact real-time Level II users who do not read the metadata file. For users who read the messages in the metadata file, the draft “Interface Control Document for the RDA/RPG” is available at: http://www.roc.noaa.gov/NWS_Level_2/2620002C_030305.pdf. Sample data sets with the new Open RDA Level II format are available at: ftp://ftp.roc.noaa.gov/Pub/ORDA_Sample_Data/. Comments on the draft Interface Control Document should be sent to: <http://www.roc.noaa.gov/Feedback/>.

The Radar Operations Center is heading a project to update the Federal Meteorological Handbook No. 11 (FMH-11). The handbook consists of parts A – D. The updated version of Part A can be found at: <http://www.ofcm.gov/fmh11/fmh11.htm>. The updated versions of parts B – D are expected to be released in the summer of 2005.

The Radar Operations Center (ROC) has a URL (<http://www.roc.noaa.gov/ops/ssm.asp>) for users to obtain:

- (1) A list of sites and which RPG software build the site is using, and
- (2) A list of sites and which volume coverage pattern the site is using, during the last automated hourly ROC call to the RPG.

Warning Decision Training Branch training materials prepared for WSR-88D NEXRAD agency operators can be found in the Tech Updates section at the following URL: <http://www.wdtb.noaa.gov/>. While many of the changes discussed are not available on the RPCCDS, the training material provides information on new capabilities provided to NEXRAD Agency WSR-88D users.

Please send suggestions, comments and questions on the materials in this summary to Tim.D.Crum@noaa.gov.